

Claims

1. Medical implant or instrument, particularly vascular endoprosthesis (1), having a deformable structural part, characterized in that the structural part is composed of two or multiple layers, whereby the layers (2, 3) have different electrical and/or magnetic properties.

2. Medical implant or instrument according to claim 1, characterized in that the structural part has an expandable framework structure, formed by a plurality of metallic struts connected with one another.

3. Medical implant or instrument according to claim 2, characterized in that the framework structure has interruptions (5), in such a manner that current paths that are closed in themselves are avoided within individual layers (2, 3) of the structural part.

4. Medical implant or instrument according to claim 3, characterized in that the interruptions (5) are situated in different positions that do not lie directly on top of one another, in different layers (2, 3) of the structural part.

5. Medical implant or instrument according to claim 3 or 4, characterized in that the interruptions (5) are disposed in

such a manner that a continuous current path (6) that extends from one end region of the structural part to the opposite end region is formed, at least within one layer (2, 3).

6. Medical implant or instrument according to claim 5, characterized in that the continuous current path (6) is configured in helix shape.

7. Medical implant or instrument according to claim 3 or 4, characterized in that the interruptions (5) are disposed in such a manner that two or more current path segments (6', 6'') configured essentially in helix shape are formed within at least two layers (2, 3) that lie on top of one another, whereby the current path segments (6', 6'') of different layers (2, 3) of the structural part are disposed so that they overlap at least partially.

8. Medical implant or instrument according to one of claims 5 to 7, characterized in that the continuous current paths (6) or current path segments (6', 6'') formed within different layers (2, 3) of the structural part are connected with one another.

9. Medical implant or instrument according to claim 8, characterized in that the current paths (6) or current path

segments (6', 6") are connected with one another by way of at least one electrical capacitor (8).

10. Medical implant or instrument according to claim 9, characterized in that the capacitor (8) is formed by electrically conductive regions of the layers (2, 3) of the structural part that lie on top of one another.

11. Medical implant or instrument according to one of claims 7 to 10, characterized in that the current paths (6) or current path segments (6', 6") are connected with one another by way of feed-throughs between the layers (2, 3).

12. Medical implant or instrument according to claim 6 or 7, characterized in that the current paths (6) configured in helix shape or current path segments (6', 6") have an opposite direction of rotation in the different layers (2, 3).

13. Medical implant or instrument according to claim 9, characterized in that the capacitor (8) and the inductive resistors (7, 9) formed by the current paths (6) or current path segments (6', 6") are coordinated with one another in such a manner that a high-frequency resonator is formed, the resonance frequency of which is equal to the resonance frequency of an MR device.

14. Medical implant or instrument according to one of claims 1 to 13, characterized in that at least two of the layers (2, 3) of the structural part consist of materials having opposite magnetic susceptibilities.

15. Medical implant or instrument according to one of claims 1 to 14, characterized in that the layers (2, 3) of the structural part are formed by two or more tube-shaped elements disposed coaxially.

16. Medical implant or instrument according to one of claims 1 to 15, characterized in that layers (2, 3) of the structural part that consist of electrically conductive material are separated from one another by means of intermediate layers (4) consisting of electrically insulating material.

17. MR imaging method for producing an image of a patient situated in the examination volume of an MR device, who has a medical implant (1), particularly according to one of claims 1 to 16, characterized in that a paramagnetic contrast agent is applied intravenously during the imaging process, which contrast agent is composed in such a manner that the paramagnetic susceptibility of the blood in the surroundings of the medical implant is essentially equal to the paramagnetic susceptibility of the medical implant itself.

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18. MR imaging method according to claim 17, characterized in that the contrast agent contains at least one substance from the group of ferrites.

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